

Claims

1. A drive mechanism comprising a rotary member carrying a first gear wheel, a driven gear wheel meshing with the first gear wheel, the first gear wheel and the driven gear wheel having a high gear ratio whereby the driven gear wheel rotates more slowly than the first gear wheel, a cam mounted for rotation with the driven gear wheel, a cam follower engaging with the cam and moveable reciprocally upon rotation of the cam, the cam follower carrying a plunger arranged to be moveable therewith to engage a container of product and extrude product from the container.
2. A drive mechanism according to claim 1 wherein the first gear wheel is rotatable by a manually operated handle.
3. A drive mechanism according to claim 1 or 2 wherein spring means is provided to urge the cam follower into engagement with the cam, the cam operating to overcome the bias of the spring means during an operational movement of the plunger in one direction, and the spring means urging the cam follower in the opposite direction during a return movement of the plunger.
4. A drive mechanism according to claim 1, 2 or 3, wherein the cam includes at least one cam surface which, in the circumferential direction, progressively increases in its spacing from the rotational axis of the cam.
5. A drive mechanism according to any one of the preceding claims, wherein there is provided two cam surfaces symmetrically arranged around the cam axis, there being two cam locations on the cam surfaces which lay closest to the axis of rotation and two cam locations which lay furthest from the axis of rotation. The closest and furthest cam locations lying adjacent to one another and the closest of the further cam locations corresponding to a return and an operative plunger location respectively.

6. A drive mechanism according to any one of claims 1 to 4, wherein there is one cam surface extending through substantially 360 degrees about the axis of the associated gear wheel.
- 5 7. A drive mechanism according to any one of the preceding claims, wherein the cam follower comprises a roller which engages with an outwardly directed cam surface.
8. A drive mechanism according to any one of the preceding claims, wherein the container is selectively locatable below the mechanism, in alignment with the plunger movement in a discharge direction, thereby to be engaged by the plunger in an operative movement thereof, the container being moveable to a non discharge, replacement position after discharge.
- 10 9. A drive mechanism according to any one of the preceding claims wherein movement of the container between a discharge position and a replacement position is a sliding movement, the container being supported on a frame shaped to receive the container.
- 15 10. A discharge mechanism according to any one of the preceding claims wherein the container includes an outlet smaller in cross section than that of the container through which outlet product is discharged, the container having a portion arranged to be engaged, deformed or moved by the plunger to reduce the container volume and cause product to be extruded through said outlet.
- 20 11. A discharge mechanism according to any one of the preceding claims comprising clutch means located between the driven gear wheel and the cam whereby, when the drive force necessary for the gear wheel to drive the cam exceeds a predetermined amount, the clutch is operated to disengage drive.
- 25 12. A drive mechanism according to claim 11, wherein the clutch mechanism includes inter engaging teeth of which the flanks of the teeth are inclined and the driven
- 30

gear wheel and the cam are relatively axially moveable whereby when the gear teeth override one another, drive is discontinued to the cam.

13. A container discharge mechanism for discharging the semi-solid contents of a
5 container, comprising a rotary member carrying a first gear wheel, a driven gear wheel
meshing with the first gear wheel, the first gear wheel and the driven gear wheel having
a high gear ratio whereby the driven gear wheel rotates more slowly than the first gear
wheel, a cam mounted for rotation with the driven gear wheel, a cam follower engaging
with the cam and moveable reciprocally upon rotation of the cam, and a plunger
10 arranged to be moveable with the cam follower to engage a container of product and
extrude product from the container outlet.

14. A mechanism according to claim 13, wherein the container has a portion
moveable relative to the container to reduce its internal volume so that, upon operation
15 of the plunger, product is discharged therefrom through a container outlet.